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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/595,440	04/19/2006	Daisuke Itoh	WAKAB81.003APC	9670
20995 7590 06/30/2009 KNOBBE MARTENS OLSON & BEAR LLP 2040 MAIN STREET FOURTEENTH FLOOR IRVINE, CA 92614				
EXAMINER				
ZHU, WEIPING				
ART UNIT		PAPER NUMBER		
1793				
NOTIFICATION DATE		DELIVERY MODE		
06/30/2009		ELECTRONIC		

**Please find below and/or attached an Office communication concerning this application or proceeding.**

The time period for reply, if any, is set in the attached communication.

Notice of the Office communication was sent electronically on above-indicated "Notification Date" to the following e-mail address(es):

jcartee@kmob.com  
eOAPilot@kmob.com

# Office Action Summary

## Application No.

10/595,440

## Applicant(s)

ITOH ET AL.

## Examiner

WEIPING ZHU

## Art Unit

1793

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --  
**Period for Reply**

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

## Status

- 1) ☒ Responsive to communication(s) filed on 11 May 2009.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

## Disposition of Claims

- 4) ☒ Claim(s) 1-18, 20-22 and 24-40 is/are pending in the application.
- 4a) Of the above claim(s) 3-14, 16-18, 20-22, 24-28, 30-34 and 36-40 is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1, 2, 15, 29 and 35 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

## Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

## Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some \* c) ☐ None of:
- ☐ Certified copies of the priority documents have been received.
  - ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
  - ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

## Attachment(s)

- 1) ☐ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☐ Information Disclosure Statement(s) (PTO/SB/08)  
Paper No(s)/Mail Date \_\_\_\_\_
- 4) ☐ Interview Summary (PTO-413)  
Paper No(s)/Mail Date \_\_\_\_\_
- 5) ☐ Notice of Informal Patent Application
- 6) ☐ Other: \_\_\_\_\_

## **DETAILED ACTION**

### ***Continued Examination Under 37 CFR 1.114***

1. A request for continued examination under 37 CFR 1.114, including the fee set forth in 37 CFR 1.17(e), was filed in this application after final rejection. Since this application is eligible for continued examination under 37 CFR 1.114, and the fee set forth in 37 CFR 1.17(e) has been timely paid, the finality of the previous Office action has been withdrawn pursuant to 37 CFR 1.114. Applicant's submission filed on May 11, 2009 has been entered.

### ***Status of Claims***

2. Claims 1, 2, 15, 29 and 35 are currently under examination wherein claims 1 and 15 have been amended in applicant's amendment filed on April 14, 2009. Claim 30 has been withdrawn and the previously withdrawn claims 3, 6, 8, 9, 11 and 16 have been amended in the same amendment.

### ***Claim Rejections - 35 USC § 103***

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

3. Claims 1, 2, 15, 29 and 35 are rejected under 35 U.S.C. 103(a) as being unpatentable over JP 2002-334618 A.

JP ('618 A) discloses (paragraphs [0016]-[0018]) a fine metal particle comprising gold, silver and copper in the form of a dry powder having a preferred average particle size of 2 to 10 nm (paragraph [0022]), wherein the surface of the particle is covered with one or more compounds containing a nitrogen, an oxygen or a sulfur atom, wherein the compounds comprise alkylamines (paragraphs [0026]-[0028]), which read on the compounds as claimed in the instant claims 1 and 29 or carboxylic acids capable of forming a metal salt with metal contained in the fine metal particles, wherein the carboxylic acids comprise the straight chain or the branched saturated carboxylic acids having 1-10 carbon atoms as claimed in the instant claims 15 and 35 (paragraphs [0030]-[0032]). The particle size range of the metal particle and the carbon numbers of the carboxylic acids of JP ('618 A) overlap the claimed ranges respectively. Therefore, a prima facie case of obviousness exists between the prior art and these aspects of the claimed invention. See MPEP 2144.05 I.

JP ('618 A) does not specify the content range of the compounds or carboxylic acids as claimed in the instant claims 1 and 15. However, JP ('618 A) discloses that the content range of the solvent is from 5 to 100 parts based on 100 parts by mass of the fine metal particles (paragraph [0036]) and that the content of the organic solvent is determined by the content of the carboxylic acids which in turn is determined by the content of the compound (paragraphs [0036] and [0030]) indicating that the contents of the carboxylic acids and the compounds are directly related to the content of the solvent. Therefore, the content range of the solvent as disclosed by JP ('618 A) reads on the claimed carboxylic acid and compound content ranges of 5 to 35%.

JP ('618 A) does not specify the boiling point of the polar solvent of 100 °C or lower as claimed in the instant claims 1 and 15. However, JP ('618 A) discloses that the boiling point of the polar solvent should be greater than the room temperature and lower than the sintering temperature (paragraph [0035]), which reads on the claimed temperature range.

JP ('618 A) does not specify the thickness of the covering layer as claimed in the instant claims 1 and 15. However, it is well held that discovering an optimum value of a result-effective variable involves only routine skill in the art. *In re Boesch*, 617, F.2d 272, 205 USPQ 215 (CCPA 1980). In the instant case, the thickness is a result effective variable, because it would directly affect the final properties of the particles as disclosed by JP ('618 A) (paragraphs [0023] and [0024]). Therefore it would have been obvious to one skilled in the art to have optimized the thickness of the covering layer on the particles of JP ('618 A) in order to achieve the desired properties of the particles. See MPEP 2144.05 II.

The claimed treatment limitations in instant claims 1 and 15 are process limitations in product-by-process claims. Even through product-by-process claims are limited by and defined by the process, determination of patentability is based on the product itself. JP ('618 A) discloses a fine metal particle, which reasonably appears to be only slightly different than the respective claimed product in the product-by-process claims. Therefore, a rejection based on section 103 of the statute is eminently fair and acceptable. See MPEP 2113.

***Response to Arguments***

4. The applicant's arguments filed on April 14, 2009 have been fully considered but they are not persuasive.

First, the applicant argues that JP ('618 A) does not disclose the content of the compound as claimed, the claimed features of specific types of the compound, specific carboxylic acids and specific choices of the thicknesses of the covering layer, and fails to provide any suggestion such that the content of the compound is directly related to the content of the solvent. The examiner respectfully disagrees with Applicant's characterization of the prior art with respect to these features. In particular, note the examiner's treatment of these claimed features in the rejection supra.

Second, the applicant argues that the carboxylic acids as disclosed by JP ('618 A) is by no means used for formation of the coating thereof on the surface of the fine metal particle. In response, the examiner notes that JP ('618 A) discloses that carboxylic acids have a function of producing a metal salt of a carboxylic acid thereof on the surface of the fine metal particle (paragraph [0030]).

Third, the applicant argues that JP ('618 A) fails to provide any suggestion as to fine particles in the form of dry powder. In response, the examiner notes that JP ('618 A) discloses that the particles dispersion is heat treated at 250 °C (abstract), which reads on the evaporation step in the instant claim 1. It would have been obvious to one of ordinary skill in the art that at the boiling temperature of the solvent which would be lower than 250 °C of the heat treatment, the solvent in the dispersion would be evaporated completely and the particles would be in the form of dry powder as claimed.

***Conclusion***

5. This Office action is made non-final. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Weiping Zhu whose telephone number is 571-272-6725. The examiner can normally be reached on 8:30-16:30 Monday to Friday.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Roy King can be reached on 571-272-1244. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

/George Wyszomierski/  
Primary Examiner  
Art Unit 1793

WZ  
6/8/2009